

March 21, 1953

AN AGREEMENT BETWEEN THE AEC AND THE DOD FOR THE  
DEVELOPMENT, PRODUCTION, AND STANDARDIZATION  
OF ATOMIC WEAPONS

PART I

OBJECTIVE

The objective of this agreement is to delineate the responsibilities to be assumed by the AEC and the DoD respectively in connection with the determination of programs for proposed atomic weapons, their development, test, standardization, and production in accordance with military requirements.

PART II

GENERAL OUTLINE OF FUNCTIONS AND RESPONSIBILITIES

1. The functions, responsibilities, and procedures established by the agreement are based on the following premises:

a. That, unless otherwise provided by law or by agreement between the Atomic Energy Commission and the Department of Defense, the development and production of atomic weapons will be the complementary responsibilities of the AEC and the DoD;

b. That the development and production of nuclear systems are primary functions of the AEC;

c. That the division of responsibilities for the development and production of atomic weapons, exclusive of the nuclear systems, will be by joint agreement on each weapon or by classes of weapons between AEC and DoD; and

d. That the determination of military characteristics, suitability, and acceptability (standardization) is a primary function of the DoD.

2. It is fundamental to progress that both agencies pursue aggressively the study of new and radical concepts for military application of atomic energy.

3. Liaison by DoD personnel at AEC field or other offices, as referred to in this paper, will be arranged by agreements covering the number of liaison personnel involved and the intent and scope of their proposed activity.

ENCLOSURE 2

.../DOE

4. For the purpose of this agreement, the functions to be performed by the AEC and DoD in the conception, program study, development, production, and standardization of atomic weapons are described in six phases. This method of defining the problem permits a clear delineation of the various functions to be performed. It should be understood that in practice new weapon programs cannot be expected to develop precisely in accordance with these six phases or in the chronological order of steps described. The phases may merge with one another and, in some cases, with the full understanding of both parties, may be omitted or deferred as is appropriate. The agreement provides a means by which the progress or relative status of a weapon project may be ascertained.

### PART III

#### A. SYNOPSIS OF FUNCTIONS AND PROCEDURES

##### Phase 1 - Weapon Conception

###### AEC

Continuing studies by AEC agencies. Studies may be informal and independent from DoD or may be conducted jointly with DoD. May result in the focusing of sufficient DoD interest in a modification of a present weapon or in the development of a new type weapon to warrant formal study.

###### DoD

Continuing studies by DoD agencies. May be independent of the AEC or may be conducted jointly with AEC. Sufficient attention may become focused on an item to warrant a formal program study. DoD requests AEC to make a program study on a new idea for a weapon or component or may initiate its own study.

##### Phase 2 - Program Study (Determination of Feasibility and Responsibilities)

###### AEC

Performs independent feasibility studies as desired.

Based on DoD's request for feasibility study, makes a study to determine a weapon's feasibility, time scale, costs, and inter-program effects, etc., and reports results to the DoD.

###### DoD

Performs independent feasibility studies or asks assistance, as desired.

Furnishes detailed guidance on weapons characteristics and probable requirements to AEC.

Reviews AEC's feasibility study. Determines the required military characteristics for the weapon and furnishes to AEC.

If a review of the feasibility study indicates that a development program is desirable, the AEC and the DoD will reach a joint agreement on the division of responsibilities for development and procurement.

(From time to time agreements may be made covering items in a whole class of weapons.)

NOTE - Phases 3, 4, 5, and 6 which follow pertain to those weapons and components for which the AEC has the responsibility to develop and produce. They do not apply to weapons or components for which the DoD is responsible. (See note - at end of Part III, B, Phase 2).

### Phase 3 - Development Engineering

#### AEC

Launches a development program based on required military characteristics. Produces prototypes for AEC and DoD evaluation.

Provides development specifications to DoD as they become available.

Determines the developmental design release date and submits a final report on the developmental design to the DoD.

#### DoD

Maintains liaison with AEC field agencies and conducts independent evaluation of prototypes as considered necessary.

Studies the development specifications of the weapon design and gives appropriate guidance to the AEC.

### Phase 4 - Production Engineering

#### AEC

Proceeds with production engineering of weapon, tooling, and layout of manufacturing facilities, without waiting for formal comments of DoD on the developmental design. Such guidance is integrated when received. Further prototype evaluation is performed during this phase.

Prepares product specifications for production release and furnishes these specifications to the DoD for review.

#### DoD

Reviews product specifications. Maintains liaison with appropriate AEC agencies on product design changes and specifications and gives appropriate guidance to AEC.

Continues evaluation of prototypes as considered necessary.

### Phase 5 - First Production

#### AEC

Initiates manufacture of weapons according to product specifications by production tools, without waiting for DoD's comments on product specifications. AEC performs own evaluation and on basis of preliminary evaluation releases weapons

#### DoD

Completes operational suitability tests and makes independent evaluation of production type weapons. If weapon as designed, produced, and approved by AEC is satisfactory, approves the weapon as standard.

to DoD for testing, training, and other purposes. Makes final evaluation and approves weapon model as suitable for standardization.

## Phase 6 - Quantity Production and Stockpile

### AEC

Brings various production facilities up to full production pursuant to DoD requirements. Maintains production, inspection and quality control programs to ensure that each article produced meets specifications.

Maintains quality assurance and functional surveillance programs to ensure the continued quality of weapons in stockpile, in accordance with current agreements with respect to stockpile operations. These programs and the data obtained therefrom will be made available to the DoD.

### DOD

Maintains liaison with AEC agencies at production facilities. Continues appraisal of weapon performance.

Maintains liaison with AEC to review performance and technical advances in anticipation of modernization changes.

Reviews AEC's quality assurance and functional surveillance programs and results and submits appropriate comments and recommendations to the AEC. Maintains functional surveillance program in accordance with current agreements with respect to stockpile operations.

## B. FUNCTIONS AND PROCEDURES

### Introduction

The following paragraphs provide an elaboration of the functions and procedures which were previously outlined in Part III, A.

### Phase 1 - Weapon Conception

1. This phase consists of continuing studies by AEC laboratories, DoD agencies, and others. A continuous exchange of information, both formal and informal, is conducted among individuals and groups. This results in the focusing of sufficient interest in an idea for a new weapon or component to warrant a program study.

2. Both agencies are free to develop such ideas through the stage of determination of feasibility except that:

a. Should the DoD wish to pursue an idea which would involve the modification of or the new development of nuclear systems, the DoD will ask the AEC to examine the practicability of at least that portion of the development.

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b. Should the AEC pursue an idea which would require the development of new delivery or handling equipment, the AEC will ask the DoD to examine the practicability of at least that portion of the development.

Phase 2 - Program Study (Determination of Feasibility and Responsibilities)

1. This phase includes the determination of the feasibility and desirability of undertaking the development of a new weapon or component, the establishment of military characteristics for the article, and the determination of respective responsibilities between the AEC and the DoD for the various tasks involved in its development and procurement.

2. If the DoD desires the AEC to make a feasibility study, the Military Liaison Committee (MLC) will make that request to the AEC.

3. The feasibility studies which the AEC undertakes at the request of the DoD will include such items as the weapon's technical feasibility, probable times for design and production releases, costs, and inter-project influences.

4. Should the AEC determine the feasibility of a new weapon to its own satisfaction, and, having submitted appropriate information and recommendations to the DoD, receive either an indication of DoD's lack of interest or no expression of interest whatsoever from the DoD, the AEC has complete freedom of action either to drop the development or to continue it independently.

5. Should the DoD determine to its satisfaction the feasibility of a new weapon which utilizes already developed and proved nuclear systems, and, having submitted appropriate information and recommendations to the AEC, receive either an indication of AEC's lack of interest or no expression of interest whatsoever from the AEC, the DoD has complete freedom of action either to drop the development or to continue it independently.

6. The DoD furnishes detailed technical guidance on desired weapon characteristics to the AEC during the program study. In particular, the DoD furnishes to the AEC as early in the program as possible requirements for:

- a. Prototype weapons for evaluation, training, etc.
- b. Production weapons and appropriate spares required for operational suitability testing, research and development, training and evaluation, and war reserve stockpile.
- c. Ancillary gear for testing, handling, etc.

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7. The feasibility and desirability of undertaking the development of a new weapon having been determined, the DoD will establish desired military characteristics for it. The AEC will provide advice, as requested, in the preparation of these Military Characteristics (MC's). The MC's will be transmitted by the MLC to the AEC. Detailed technical guidance in elaboration of these approved MC's will be provided as necessary by the AFSWP or cognizant Service.

8. The DoD may assign AFSWP or one of the Services as the cognizant DoD agency for the weapon project. This cognizant DoD agency would then recommend a specific assignment of responsibilities to the MLC and the DMA would make a similar recommendation to the AEC. Insofar as is practicable, the prime proposed responsibilities of the AEC and the DoD for development and production should be determined by the DMA and the cognizant DoD agency. The MLC and the AEC then reach an agreement on the respective assignments. From time to time agreements may be made covering items in a class of weapons.

9. Designated representatives of the appropriate DoD agency and the AEC will coordinate efforts on the weapon project, and will report to the cognizant DoD agency and the AEC as principals. These representatives will recommend resolution of interface problems, will recommend joint participation in weapons development tests, and will ensure such interchange of information as will permit each principal to make its own independent evaluation of the weapon.

NOTE - Components which are assigned to the DoD for development and production are excluded from further consideration in this paper. It is understood that both the AEC and the DoD must assure themselves that those components for which they have primary development and production assignment will function properly with the other's items. Both the DoD and the AEC must have the information necessary to evaluate independently the functioning of the products they produce.

### Phase 3 - Development Engineering

1. This phase includes those events beginning with the launching of AEC's development program, through the determination of development specifications, and culminating in the design release by the development agencies.

2. The AEC will write development specifications and will furnish copies of them to the DoD as these specifications become available.

3. The cognizant DoD agency will examine AEC development specifications and will furnish guidance either at the DMA or AEC Field Office level, as appropriate. Continuous liaison will be maintained by AFSWP or the cognizant Service.

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4. DoD liaison concerning activities at AEC and AEC contractor facilities will be with the Operations or Field Offices concerned. Access by DoD liaison personnel to AEC or contractor plants will be permitted. Guidance resulting from such DoD liaison activities will be only at AEC Field Office or higher level.

5. The AEC, in addition to furnishing the DoD with the results of its own evaluation testing of components as the development proceeds, will furnish prototype components and complete articles to the DoD for use in tests by the cognizant Service or AFSWP as may be requested. The cost of the components and equipment furnished upon request will be borne by the DoD. Early DoD request for items for test purposes is essential.

6. When the DoD furnishes to the AEC its quantitative requirements, the AEC issues the authorization for procurement, and begins preliminary planning and scheduling for production rates and deliveries to the DoD.

#### Phase 4 - Production Engineering

1. This phase covers those activities which adapt the developmental design into a manufacturing system which can produce weapons and components on a production basis. Comments from the DoD on the developmental design are not prerequisites to the initiation of production engineering. Comments on the developmental design are considered for integration when received. In the meantime, testing of developmental prototypes conducted by both the AEC and the DoD and either jointly or separately will be continued. This phase culminates in the production release at which time the AEC furnishes the product specifications to the DoD for comment. Throughout this phase AFSPW or the cognizant Service will maintain liaison with appropriate AEC activities.

2. The AEC production agencies release the design for production. This step follows the completion of production engineering, basic tooling, layout, and the adoption of fundamental assembly procedures. Formal comments by the DoD on the product specifications are not prerequisite for the production release. (Various DoD agencies responsible for the training of weapons organizations, operational suitability testing, and other weapon evaluation projects utilize the production release date for planning purposes.)

#### Phase 5 - First Production

1. This phase comprises the delivery of the first weapons from production facilities. The production rate is limited, but increases as the

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various production facilities come into operation. These first weapons are evaluated by AEC and DoD agencies. During this phase, AEC makes a preliminary evaluation of the weapon pending its final evaluation and subsequent approval as to suitability for standardization. This phase terminates in the DoD's formal standardization action.

2. The preliminary evaluation does not constitute a finding that the weapons are suitable for standardization, or for operational use, except in emergency.

3. Should the DoD require weapons for test or training purposes prior to final approval by the AEC, then these weapons may be utilized with the understanding that the AEC final evaluation has not been made.

4. A final evaluation is made by AEC agencies after the completion of an engineering evaluation program for the weapon.

5. Based upon this final evaluation, the AEC advises the DoD that the production model is suitable for standardization with limitations, if any.

6. The DoD will accomplish a standardization action, and through the MIC will inform the AEC as to whether the weapon meets the desired military characteristics and whether it should become a standard or limited stockpile item. (If the DoD needs, for its evaluation, information in addition to that already obtained from development, engineering, and operational suitability tests, the DoD will purchase the necessary material and perform appropriate tests.)

#### Phase 6 - Quantity Production of Mark Weapons for Stockpile

1. During this phase the AEC undertakes the necessary quantity production of Mark weapons for stockpile. This includes the phased production of components, spare parts and ancillary gear. Previously produced weapons are redesignated as Mark weapons if they meet the criteria for a standardized weapon. If not, an appropriate modification program may be undertaken.

2. The AEC will operate whatever inspection system it feels to be required in order to permit certification of each item as a Mark weapon as it is delivered to stockpile. The DoD will provide liaison with AEC Field Offices at production agencies. Liaison officers' reports will be through military channels and comments or recommendations by DoD will be through military channels to the AEC at DMA or AEC Field Office level.

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3. The AEC will maintain appropriate quality assurance programs. These the DoD will review, offering appropriate comment. In addition, data obtained during these programs will be made available to the DoD for review and comment.

4. A detailed division of stockpile responsibilities between the AEC and the DoD was agreed upon in 1951 and will continue to apply until changed by mutual agreement.

#### PART IV

#### DEFINITIONS

1. Nuclear System - The nuclear system is comprised of the fission and/or fusion material, together with those components required to convert the system from the safe condition to an explosion. This definition specifically excludes the fuzing system of the weapon.

2. Development Specifications - A description, sometimes including drawings, of the major considerations to be observed in the design and development of a new weapon or component.

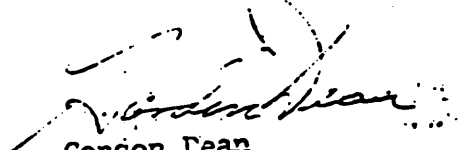
3. Product Specifications - The document and drawings used in a production contract to describe what the contractor is to produce and the standards or tolerance which the product is to meet.

4. First Production - First production is that production in conformance with a product specification prior to AEC approval and DoD standardization.

5. Quantity Production - Quantity production is production in conformance with product specifications, occurring after AEC approval and DoD standardization.

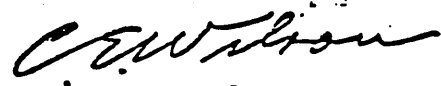
6. Mark Weapon - A weapon which has been produced according to a standardized design.

UNITED STATES ATOMIC ENERGY COMMISSION

  
Gordon Dean  
Chairman

DEPARTMENT OF DEFENSE

MAR 2 1951

  
Charles E. Wilson  
The Secretary of Defense

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